

CLAIMS:

1. A method of measuring video quality of an input sequence (IS) of digital pictures, said method comprising the steps of:

- determining (21) at least one reference level (JND) above which visual artifacts become noticeable to a group of subjects, with a corresponding predetermined artifact metric (M), from a set of reference sequences (RS) of digital pictures only comprising a corresponding artifact,
- measuring (22) at least one artifact level (L) of the input sequence with the corresponding predetermined artifact metric (M),
- computing (23) a video quality metric (OQM) of the input sequence from at least one ratio of the artifact level (L) to the reference level (JND) corresponding to a same predetermined artifact metric.

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2. A method of measuring video quality as claimed in claim 1, comprising the steps of:

- determining (21a) a blocking reference level (JNDB) with a predetermined blocking artifact metric (BM), from a set of reference sequences (BRS) of digital pictures only comprising blocking artifacts,
- determining (21b) a ringing reference level (JNDR) with a predetermined ringing artifact metric (RM), from a set of reference sequences (RRS) of digital pictures only comprising ringing artifacts,
- determining (21c) a corner outlier reference level (JNDC) with a predetermined corner outlier metric (CM), from a set of reference sequences (CRS) of digital pictures only comprising corner outlier artifacts,
- measuring (22a,22b,22c) a blocking artifact level (B), a ringing artifact level (R), and a corner outlier level (C) of the input sequence with the blocking artifact metric (BM), the ringing artifact metric (RM), and the corner outlier metric (CM), respectively, and
- computing (23) the video quality metric (OQM) of the input sequence of digital pictures from ratios of the blocking artifact level (B) to the blocking reference level (JNDB), the

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ringing artifact level (R) to the ringing reference level (JNDR), and the corner outlier level (C) to the corner outlier reference level (JNDC).

3. A method of post-processing an input sequence (IS) of digital pictures, said

5 method comprising the steps of:

- determining (21) at least one reference level (JND) above which visual artifacts become noticeable to a group of subjects, with a corresponding predetermined artifact metric (M), from a set of reference sequences (RS) of digital pictures only comprising a corresponding artifact,
- 10 - measuring (22) at least one artifact level (L) of the input sequence with the corresponding predetermined artifact metric (M),
- computing (23) a video quality metric (OQM) of the input sequence from at least one ratio of the artifact level (L) to the reference level (JND) corresponding to a same predetermined artifact metric, and
- 15 - correcting (61) the input sequence of digital pictures as a function of the video quality metric, for providing an output sequence (OS) of digital pictures.

4. A method of encoding an input sequence (IS) of digital pictures, said method comprising the steps of:

- first encoding (71) the input sequence of digital pictures for providing encoding parameters,
- determining (21) at least one reference level (JND) above which visual artifacts become noticeable to a group of subjects, with a corresponding predetermined artifact metric (M), from a set of reference sequences (RS) of digital pictures only comprising a corresponding artifact,
- 20 - measuring (22) at least one artifact level (L) of the input sequence with the corresponding predetermined artifact metric (M),
- computing (23) a video quality metric (OQM) of the input sequence from at least one ratio of the artifact level (L) to the reference level (JND) corresponding to a same predetermined artifact metric,
- 25 - modifying the encoding parameters as a function of the video quality metric, and
- second encoding (72) the input sequence of digital pictures for providing a sequence of encoded digital pictures (ES) from the modified encoding parameters (MEP).

5. A device for measuring video quality of an input sequence of digital pictures, comprising:

- at least one means (22) for measuring an artifact level (L) with a corresponding predetermined artifact metric (M),
- 5 - means for computing (23) a video quality metric (OQM) of said input sequence from at least one ratio of an artifact level (L) to a reference level (JND) determined by a group of subjects, with the corresponding predetermined artifact metric (M), in a sequence of digital pictures only comprising a corresponding artifact, from a level above which visual artifacts become noticeable.

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6. A device for measuring video quality as claimed in claim 5, comprising:

- means for measuring (22a) a blocking artifact level (B) of the input sequence,
- means for measuring (22b) a ringing artifact level (R) of the input sequence,
- means for measuring (22c) a corner outlier level (C) of the input sequence,
- 15 - means for computing a video quality metric (OQM) for said input sequence from ratios of the blocking artifact level to a blocking reference level, the ringing artifact level to a ringing reference level, and the corner outlier level to a corner outlier reference level.

7. A device for post-processing an input sequence (IS) of digital pictures,

20 comprising:

- at least one means for measuring (22) an artifact level (L) of the input sequence with a corresponding predetermined artifact metric (M),
- means for computing (23) a video quality metric (OQM) of the input sequence from at least one ratio of the artifact level (L) to a reference level (JND) determined by a group of subjects, with the corresponding predetermined artifact metric (M), in a sequence of digital pictures only comprising a corresponding artifact, from a level above which visual artifacts become noticeable, and
- 25 - means for correcting (61) the input sequence of digital pictures as a function of the video quality metric, and adapted to provide an output sequence (OS) of digital pictures.

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8. A device for encoding an input sequence (IS) of digital pictures, comprising:

- means for a first encoding (71) of the input sequence of digital pictures to provide encoding parameters,

- at least one means for measuring (22) an artifact level (L) of the input sequence with a corresponding predetermined artifact metric (M),
- means for computing (23) a video quality metric (OQM) of the input sequence from at least one ratio of the artifact level (L) to a reference level (JND) determined by a group of subjects, with the corresponding predetermined artifact metric (M), in a sequence of digital pictures only comprising a corresponding artifact, from a level above which visual artifacts become noticeable,
- means for modifying the encoding parameters as a function of the video quality metric, and
- 10 - means for a second encoding (72) of the input sequence of digital pictures adapted to provide a sequence of encoded digital pictures (ES) from the modified encoding parameters (MEP).

9. A computer program product for an integrated circuit that comprises a set of instructions, which, when loaded into said integrated circuit, causes the integrated circuit to carry out the method as claimed in claim 1 to 2.